REMARKS

I. Status of the Claims

Claims 119-153, 231, 233-271, 273-311, and 313 are currently pending. Claims 119, 141, 233, 255, 271, 273, 295, and 311 have been amended herein. Claims 272 and 312 have been cancelled herein.

II. Claim Amendments

Claims 119, 233, 271, 273, and 311 have been amended herein to recite, *inter alia*, "a SAT capacity from about 7 grams/gram to about 14 grams/gram" or "a SAT capacity from about 8 grams/gram to about 14 grams/gram." Support for those recitations can be found in at least Figures 33 and 34 and in claims 61 and 92 of the original specification. Claims 119, 233, and 273 have been amended to recite, *inter alia*, "dispersing in the first or a second aqueous solution thermally bondable fibers compounded with at least one polymeric material having at least one hydrophilic portion" and claims 141, 255, and 295 have been amended to recite, *inter alia*, "wherein the polymeric material is chosen from at least one of an anionic, a zwitterionic, a cationic, and a non-ionic surfactant." Support for those recitations can be found in at least paragraphs [069] through [072] of the original specification.

In light of at least that noted support in the original specification, Applicant submits that the amendments do not add any prohibited new matter and that the skilled artisan would readily understand Applicant to have been in possession of the claimed subject matter at the time this application was filed. Therefore, Applicant requests that the Office enter the claim amendments without objection.

III. Rejection Under 35 U.S.C. § 112

The Office has rejected claims 233-312 under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement, asserting that specification support does not exist for the SAT capacity lower recitations of 7 grams/gram and 8 grams/gram. *See* Office Action at 6-7. Applicant respectfully traverses this rejection.

As amended herein, each of the pending claims now recites, either directly or indirectly, "a SAT capacity from about 7 grams/gram to about 14 grams/gram" or "a SAT capacity from about 8 grams/gram to about 14 grams/gram." Applicant maintains that those ranges were clearly described in the original specification in such a way as to reasonably convey to the skilled artisan that Applicant was in possession of that subject matter at the time this application was filed. In particular, the pending claims are fully supported by at least original claims 61 and 92, which recited "a SAT from about 5 g/g to about 14 g/g," in that the claimed recitations are clearly some portion of that range. *See* MPEP § 2163.05(III). Figures 33 and 34 also expressly disclose embodiments within the ranges recited in the pending claims.

In view of at least original claims 61 and 92 and Figures 33 and 34, the test for written description (*see* MPEP § 2163.02) has clearly been met for the rejected recitations. Applicant requests that the Office withdraw the rejection.

IV. Rejection Under 35 U.S.C. § 103(a) Over Anderson in View of Horimoto, Oku, and Smook

The Office has rejected claims 119-139, 141-153, 231, 233-245, 247-253, 255-280, 282-285, 287-293, and 295-313 as obvious under 35 U.S.C. § 103(a) over WO

96/12615 to Anderson et al. ("Anderson") in view of U.S. Patent No. 4,655,877 to Horimoto et al. ("Horimoto"), U.S. Patent No. 5,254,399 to Oku et al ("Oku"), and Smook, Handbook for Pulp and Paper Technologists, (2nd ed. 1992) ("Smook"). The Office believes that Anderson teaches a method of making a fibrous web comprising forming a furnish comprising bi-component and wood fibers, the basis weight of which may be from 20-60 lb/2880 ft^2. *See* Office Action at 3. However, the Office admits that Anderson does not teach that the bi-component fibers may exhibit hydrophilicity, nor the claimed line speed, formation index, wet breaking length, or SAT capacity. *Id.* at 7-9.

To remedy those deficiencies, the Office asserts that Horimoto discloses that absorbent properties of a web can be improved by using short fibers of thermoplastic resin rendered hydrophilic by introduction of a nonionic surfactant, and believes that Smook and Oku show the attributes of line speed and a slotted screen. *Id.* at 9. The Office believes that the references are analogous and states that the claimed properties of formation index, wet breaking length, and SAT capacity would have been inherent because the structure recited in the prior art is substantially identical to that of the claims. *Id.* at 9-12. Applicant respectfully traverses the rejection.

To establish a *prima facie* case of obviousness, three basic criteria must generally be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to have modified the reference or to have combined references' teachings in an effort to achieve the subject matter of the rejected claims. Second, the skilled artisan must have had a reasonable expectation of success in making the asserted modification or combination. Finally, the reference or references must teach or suggest all the claim

limitations. *See* MPEP § 2143. The recent decision in *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385 (April 30, 2007), recognized that a showing of "teaching, suggestion, or motivation" could provide helpful insight in determining whether the claimed subject matter is obvious under § 103(a) and clarified that, "[t]o facilitate review, this analysis [of whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue] should be made explicit." Applicant submits that the Office cannot meet those requirements based on the references of record and respectfully requests that the rejections be withdrawn.

A. Neither Anderson, Horimoto, Oku, nor Smook Teach or Suggest Dispersing Thermally Bondable Fibers Compounded With at Least One Polymeric Material Having at Least One Hydrophilic Portion

Although Applicant believes that its previous responses are more than sufficient to show that the pending claims are patentable over the references of record, Applicant has amended those claims for further clarification. In particular, Applicant has amended claims 119, 233, and 273 to recite, *inter alia*, "dispersing in the first or a second aqueous solution thermally bondable fibers compounded with at least one polymeric material having at least one hydrophilic portion" and claims 141, 255, and 295 to recite, *inter alia*, "wherein the polymeric material is chosen from at least one of an anionic, a zwitterionic, a cationic, and a non-ionic surfactant."

The references of record cited by the Office, and in particular Horimoto, fail to teach or suggest at least such a "compounding" of a polymeric material. As previously explained, the specification states that "the thermally bondable fibers according to the present invention either have a bondable portion which is hydrophilic or have been surface modified to impart hydrophilicity thereby allowing the fibers to be dispersed."

Paragraph [054]. The specification continues that, "according to one embodiment of the present invention, when a bondable material is used that is not inherently hydrophilic or dispersible, the fibers may be surface modified to render them hydrophilic" and that the surface modified fibers may be produced by "compounding" polymeric materials having hydrophilic portions to the bondable portions of the fibers that can render the surface of the bondable portion hydrophilic. Paragraph [069].

The terms "compounded" and "surface modified" indicate that the fibers' surfaces have undergone at least one semi-permanent modification. As such, the present claims do not contemplate only spraying the hydrophobic thermally bondable fibers with a surfactant, or dipping the hydrophobic thermally bondable fibers in a surfactant, and thereby calling the fibers hydrophilic—unless those processes also results in at least one semi-permanent modification to the fibers' surfaces. As can be seen in paragraphs [069] through [070] of the specification, fibers that are compounded with a polymeric material having at least one hydrophilic portion are modified such that the polymeric material is semi-permanently attached (e.g., anchored) in the outer layer of the fibers such that leaching with hot water or another solvent may be required to remove them.

Such a "compounding" or surface modification" is simply not taught or suggested by the cited references. In particular, Horimoto (the reference to which the Office points for a teaching of the hydrophilic fibers) discloses that its hydrophobic fibers are merely "rendered hydrophilic" by forming an aqueous fibrous slurry containing a nonionic surface-active agent, and then dehydrating the slurry. *See* col. 1, lines 19-22. There is no teaching or suggestion that simply forming an aqueous slurry of hydrophobic fibers in

a surfactant and dehydrating the slurry is anything other than an impermanent or transient fiber treatment that, without more, is not "compounding."

Horimoto explicitly recognizes the impermanence of its modification. The references states that "when surface-active agents are spray-coated on these short fibers in order to improve their hydrophilicity, no great difference in effect of rendering them hydrophilic is seen depending upon the types of the surfactants" (col. 1, lines 64-68) and that "if an attempt is made to improve the hydrophilicity of short fibers of thermoplastic resin by adding a surface active agent to an aqueous slurry of the thermoplastic short fibers and then dehydrating the slurry, it often results in unsatisfactory hydrophilicity or no improvement of the hydrophilicity is obtained" (col. 2, lines 8-13). In order to increase the degree of hydrophilicity, Horimoto focuses not on methods of physically surface modifying or compounding a surfactant to the thermally bondable fibers, but instead on "the type and HLB value of the surface-active agent used, and the relation between the melting point of the surface-active agent and the temperature of the aqueous slurry at the time of dehydration." Col. 2, lines 14-26. As such, the cited reference itself in no way teaches the fibers claimed herein.

Moreover, as explained in the Response dated April 9, 2007, that Horimoto does not contemplate the same type of surface modification as the pending claims is further highlighted by reading the disclosure of Horimoto taken as a whole. The reference does not teach or suggest any type of surface modification such that the fibers are rendered sufficiently hydrophilic to allow for dispersion of the fibers in a wet forming process. In particular, while Horimoto may summarily state that its web structures could be obtained by a wet or dry sheet forming process (*see* col. 4, lines 28-29), the reference does not

provide any disclosure of how such a wet forming process might be accomplished or what the properties of the web would be if it were. Instead, the remainder of the disclosure, including each of the examples as well as the claims themselves, teaches an absorbent web structure obtained by a dry sheet forming process. *See, e.g.,* independent claim 1 (explicitly reciting "an absorbent web structure obtained by a dry sheet forming process"). In fact, Horimoto avoids the difficulties of the wet forming process altogether by first dehydrating and then drying its hydrophilic thermoplastic fibers prior to incorporation into the sheet by its dry process. *See* col. 4, lines 11-19. Horimoto provides no, or too little, information for the skilled artisan to have been motivated to modify its disclosure or combine it with other references to achieve the subject matter recited in the pending claims.

Anderson in view of Horimoto fails to teach or suggest a method of making a paper product including, *inter alia*, "dispersing in the first or a second aqueous solution thermally bondable fibers compounded with at least one polymeric material having at least one hydrophilic portion." Neither Oku nor Smook remedy this deficiency. Therefore, Anderson, Horimoto, Oku, and Smook cannot support a proper *prima facie* case of obviousness and Applicant requests that the rejection be withdrawn.

B. Neither Anderson, Horimoto, Oku, nor Smook, Whether Taken Alone or in Any Combination, Teach or Suggest any Method of Making a Paper Product with the Claimed Attributes

Independent claims 119, 233, and 237 recite, *inter alia*, that the nascent tissue web is formed at a line speed in excess of 1000 feet/minute and has certain properties among SAT capacity, formation index, and CD wet breaking length. Neither Anderson, Horimoto, Oku, nor Smook teach or suggest a method of making a paper product with

those attributes. While the Office asserts that the claimed properties of formation index, wet breaking length, and SAT capacity would have been inherent because the structure recited in the prior art is substantially identical to that of the claims (*see* Office Action at 10), Applicant has shown that unsubstantiated presumption to be incorrect. As explained above, the cited references fail to teach or suggest at least a method of making a paper product including, *inter alia*, "dispersing in the first or a second aqueous solution thermally bondable fibers compounded with at least one polymeric material having at least one hydrophilic portion."

The present inventors surprisingly found that compounding thermally bondable fibers with at least one polymeric material having at least one hydrophilic portion to affects the ability of those fibers to be dispersed in an aqueous solution, such as in the headbox of a paper-making machine. Fiber dispersability directly affects certain attributes of the paper-making process and of the resultant paper web. For example, greater fiber dispersability may lead to the ability to increase the line speed of the paper making process, for instance in excess of 1000 feet/minute as claimed in the independent claims. Fiber dispersability may also affect the formation index of the resultant tissue web, as well as the CD wet breaking length. Finally, the degree of hydrophilicity may directly affect at least the web SAT capacity. The Office has failed to demonstrate that paper webs of cited references would contain those attributes in view of the significant differences between the hydrophilic fibers of the pending claims and those cited. The Office has also failed to show that the skilled artisan would have been motivated to modify any of the cited references to achieve the recited inventions, or even that such inventions would have been recognized as desirable.

Furthermore, as explained in the Response dated April 9, 2007, Anderson's requirement of an elastomer bonding material (preferably latex) disposed throughout each of the surface regions of the web to impart strength and abrasion resistance mitigates against the expectation that the Anderson's web, even if combined with the fibers of Horimoto, would have a SAT capacity of from about 7 or 8 grams/gram to about 14 grams/gram, as recited in the pending claims. While the Office is correct that the open language "comprising" of the pending claims allows for the bonding material of Anderson to be applied to the web, the web must still meet the other recitations of the claims. The Office has failed to demonstrate that a web including the substantial amount of elastomer bonding material taught by Anderson would contain those other properties, including the SAT capacity. *See* Anderson at page 8, line 22 to page 9, line 9 (the elastomer bonding material is applied to each of the surface regions such that it covers about 15% to 60% of the surface of the web and penetrates about 10% to 60% throughout the web thickness). Applicant has asserted that Anderson's web would not have at least the recited SAT capacity and the Office has not shown otherwise.

Therefore, in view of at least the substantial differences between the pending claims and the cited references, the Office's assumption that the claimed attributes would be inherent is incorrect. The Office has failed to establish a proper *prima facie* case of obviousness and Applicant respectfully requests that the rejection be withdrawn.

V. Rejection Under 35 U.S.C. § 103(a) Over Cook in View of Oku and Smook

The Office has rejected claims 119-124, 126-127, 130, 132, 134-141, 143-153, 231, 233-238, 240-241, 244, 246, 248-255, 257-278, 280-281, 284, 286, and 288-313 under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,360,420 to Cook et al.

("Cook") in view of Oku and Smook. The Office asserts that Cook discloses a method of making an absorbent structure comprising providing an aqueous slurry of intermixed fibers including cellulosic fibers and hydrophilic thermally bondable fibers, forming the fibers into a nascent web wherein the cellulosic and thermoplastic plastic fibers are evenly distributed throughout, drying the web, and heating the web to melt the thermoplastic fibers to bond the web. *See* Office Action at 12-13.

The Office admits that Cook does not disclose, *inter alia*, the claimed line speed, the formation index, the wet breaking length, or the SAT capacity of the web, but asserts that it would have been obvious to combine the teachings of Oku and Smook to arrive at those attributes. *Id*. at 13-14. Moreover, the Office asserts that "the web of Cook et al in view of Oku et al and Smook has substantially the same composition and structure as the instant invention," and that "for reasons given previously, it would have been obvious to one of ordinary skill in the art to obtain the claimed properties of formation index, wet breaking length, and SAT in the web." *Id*. at 14. Applicant respectfully traverses this rejection.

A. Neither Cook, Oku, nor Smook Teach or Suggest Dispersing Thermally Bondable Fibers Compounded With at Least One Polymeric Material Having at Least One Hydrophilic Portion

The Office asserts that Cook teaches dispersing thermally bondable fibers exhibiting hydrophilicity in an aqueous solution. However, like Horimoto, Cook's thermally bondable fibers have not been compounded with at least one polymeric material having at least one hydrophilic portion, as recited by the pending claims as amended herein. Instead, like Horimoto, the thermally bondable fibers of Cook have been loosely and transiently rendered hydrophilic by either the spraying of the fibers

with a surfactant or by dipping the fibers into a surfactant. *See* Cook at col. 18, lines 30-52. As described above, that type of modification is impermanent not necessarily "compounding." In fact, in discussing exactly that type of modification, Horimoto states "when surface-active agents are spray-coated on these short fibers in order to improve their hydrophilicity, no great difference in effect of rendering them hydrophilic is seen depending upon the types of the surfactants" (*see* col. 1, lines 64-68). Cook itself, therefore, shows that its fibers are not those of the pending claims and there is no suggestion that the claimed fibers would have been desirable.

Therefore, at least because Cook fails to teach or suggest at least a method of making a paper product including, *inter alia*, "dispersing in the first or a second aqueous solution thermally bondable fibers compounded with at least one polymeric material having at least one hydrophilic portion," and because neither Oku nor Smook remedy this deficiency, the Office has failed to establish a proper case of *prima facie* obviousness and Applicant requests that the pending rejection be withdrawn.

B. Neither Cook, Oku, nor Smook, Whether Taken Alone or in Any Combination, Teach or Suggest a Method of Making a Paper Product With the Claimed Attributes

Cook, taken in view of any of the references of record, fails to render obvious the pending claims, at least because it cannot render obvious a method of making a paper product wherein the nascent tissue web is formed at a line speed in excess of 1000 feet/minute and wherein the nascent tissue web has the properties recited in the pending claims from among SAT capacity, formation index, and CD wet breaking length. In particular, the web of Cook, even in view of Oku or Smook, does not have substantially the same composition and structure as the claimed invention.

First, as explained above, the thermally bondable fibers exhibiting hydrophilicity of Cook are not those recited in the pending claims. For that reason alone, and as explained above, one of ordinary skill in art would not have expected the resultant web of Cook to have the claimed attributes, or even that those attributes would have been desirable or achievable through combination of the cited references.

Second, Cook is directed to a method of making a significantly different products than those recited in the pending claims. Cook is generally directed to a method of making an absorbent core structure useful for disposable absorbent articles such as diapers and incontinent briefs. *See* col. 4, lines 16-19. Its core structure may comprise a wicking layer containing thermally bondable fibers that serve as a "fluid acquisition / distribution layer." Cook goes on to explain that the purpose of this layer is to quickly collect, temporarily hold, and facilitate transport of discharged body fluids (*see* col. 7, lines 29-46) and that the layer "essentially comprises a web of hydrophilic chemically stiffined cellulosic fibers" that "are typically wood pulp fibers which have been stiffened with an intrafiber chemical stiffening agent" (*see* col. 8, line 65 to col. 9, line 2). Cook also notes that the chemically stiffened cellulosic fibers may be present in an amount from 50 to 100% of the fluid acquisition/distribution layer. *See* col. 7, lines 47-52.

As the Office admits on pages 13-14 of the Office Action, Cook does not teach or disclose the claimed formation index, CD wet breaking length, or SAT. Instead, the Office points to the secondary references for other examples of paper products which may contain some of these properties. However, simply because one type of paper product may be capable of possessing some of the above-listed properties does not mean that the paper product taught by Cook would be capable of possessing those

properties, or that the skilled artisan would have been motivated to combine the references in order to achieve the claimed products of this application. Applicant particularly notes that none of the secondary references contain the chemically stiffened celluosic fibers of Cook, nor would the skilled artisan have been motivated to remove those fibers from Cook's products—Cook states that a fluid acquisition/distribution layer comprising the stiffened cellulosic fibers is an "essential element." *See* col. 7, lines 30-34. As such, any modification of Cook to remove its key resilient fibers would result in a destruction of the intended purpose of the paper product of Cook and would be improper as part of a *prima facie* case. *See* M.P.E.P. § 2143.01 ("The proposed modification cannot render the prior art unsatisfactory for its intended purpose.").

Cook teaches that its thermoplastic fibers preferably do not significantly imbibe or absorb aqueous fluid (*see* col. 18, lines 30-34), which mitigates against a product according to Cook, even if combined with the teachings of Oku or Smook, having a SAT capacity of from about 7 or about 8 to about 14 grams/gram as recited in each of the pending independent claims. Moreover, Cook teaches that its chemically stiffened cellulosic fibers, as compared to conventional non-stiffened cellulosic fibers, "form lower tensile strength sheets" (*see* col. 14, lines 30-34), which mitigates against a product according to Cook, even if combined with the teachings of Oku or Smook, having a CD wet breaking length of at least about 250 meters as recited in the pending claims.

Finally, Applicant asserts that the paper product of Cook would not have a formation index of greater than about 42, as recited by independent claims 119 and 273. Cook is not directed to end-use consumer tissue products but instead to a fluid distribution layer for use in an absorbent product. Cook's own disclosure clearly

indicates that good formation is not of particular concern in such an application. Cook never teaches or suggests that its paper product would contain good formation, nor even why such good formation would be beneficial in a fluid distribution application.

Quite simply, it is improper for the Office to conclude that the properties of one paper product would be the same as the properties of a second paper product made with a completely different composition of fibers. As such, the Office has failed to establish a proper *prima facie* case of obviousness based on Cook, Oku, and Smook. Applicant respectfully requests that the pending rejection be withdrawn.

VII. Conclusion

In view of the foregoing arguments and amendments, Applicant respectfully submits that the present application is in condition for immediate allowance. None of the cited references, whether taken alone or in any combination, teach or suggest a method of making a paper product including, *inter alia*, "dispersing in the first or a second aqueous solution thermally bondable fibers compounded with at least one polymeric material having at least one hydrophilic portion." Moreover, none of the references of record, taken alone or in any combination, render obvious a method of making a paper product wherein the nascent tissue web is formed at a line speed in excess of 1000 feet/minute and wherein the nascent tissue web has physical properties recited in the pending claims.

If the Office has any questions regarding this Response or the application in general, Applicant requests that the Office contact the undersigned representative at the information listed below. Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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